

REMARKS

Claims 1-11 were pending in the application. With this amendment, claim 1, 4 and 9 have been amended and claim 2, 3, 7 and 11 have been cancelled. No new matter has been added by this amendment. Thus, claims 1, 4 -6 and 8-10 are at issue.

Claim Rejections and Amendments to Claims

35 U.S.C. § 112

In the Office Action, the Examiner rejected claims 1-11 under 35 U.S.C. §112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 1 was rejected in view of the limitation “a water level detecting means” invoking 35 U.S.C. §112, paragraph six, without having supporting structure for this means. While Applicants do not necessarily agree with this rejection, and believe that the specification does disclose this element, Applicants have hereby amended claim 1 to remove this limitation in order to expedite prosecution. Thus, Applicants respectfully request withdrawal of this rejection.

The Examiner also rejected claims 1, 4, and 9 on the grounds that the use of the terms “detergent” and “modifying agent” seem to contradict one another in the context of the claim preamble, by having a process that does not use a “detergent” but does use a “modifying agent,” with both the “detergent” and “modifying agent” being cleansing agents. Applicants respectfully traverse this interpretation of these terms because the preamble does not require no use of detergents or modifying agents, only use of detergents or modifying agents applied by the user at the time of washing. Specifically, Applicants note that the present application relates to “A washing machine for washing items using washing water without addition of a detergent by the

user.” Though the user does not need to add a detergent by the user himself / herself, a “modifying agent” is supplied to the washing tube by a modifying agent feeding device, which is connected with the water supply device of a washing machine during the washing process, but not “by the user.” Thus, Applicants assert that there is no contradiction, and respectfully requests withdrawal of this rejection.

The Examiner also rejected claim 2 on the grounds that there is insufficient antecedent basis for the limitations of “the water drainage” and “liquid outlet tube.” Applicants have amended claim 2 to provide the proper antecedent basis. Thus, Applicants respectfully request withdrawal of this rejection.

Rejections under 35 U.S.C. §102 and §103

The Examiner rejected claims 1, 4-6, and 8 as being anticipated by Sumida (US5947135). The Examiner also rejected claims 2-8 as being as being obvious over Sumida alone, and claims 9-11 as being obvious over Sumida in view of Hasegawa (JP10-33448).

Claims 1, 4 -6 and 8- 10

Claim 1

Claim 1 is amended to incorporate the subject matter of claim 2 (now canceled), and is also amended to recite the structure of the dosing and feeding device in the modifying agent feeding device. In addition, claim 1 has been amended to include the connection of the dosing and feeding device with the water supply tube in the washing machine, as well as the limitation of “the modifying agent is a mixture of one or more detergent.” The amendment to claim 1 is fully supported by at least paragraphs 37, 38, 57, and/or 93 within the written description, as well as at least Figure 6. By these amendments, Applicants have clearly differentiated claim 1 in the

present application from the cited references within the Office Action. Applicants, therefore, respectfully request reconsideration of these rejections and allowance of these claims for at least the following reasons.

Specifically, as described in the Background section of the present application, though the electrolytic efficiency is improved by adding the electrolyte to the washing tube when electrolyzed water is manually applied by the user for washing, the subsequent change in water quality will most likely result in fabric hardening. Moreover, as indicated, the electrolyte must be added by the user to washing machine manually. To overcome at least these disadvantages, one of the objects of the present invention is to provide a washing machine equipped with a new washing auxiliary device having a simple structure that is convenient to install, without requiring the user to manually add the detergent during washing.

To achieve at least these objectives, claim 1 has been amended to require a modifying agent feeding device with a dosing and feeding device, which is a volumetric measuring valve for providing the modifying agent (detergent) at a certain quantity. These limitations make it possible to store the detergent in the modifying agent feeding device during the manufacture of the present invention at the factory, when the washing machine is being sold, or at some other time well in advance of washing. A mixture of one or more detergents stored in the modifying agent feeding device, is supplied into the washing tube automatically without the addition of a detergent by the user during each washing operation.

Sumida only discloses a dishwasher in which an ionized water producing portion for electrolyzing water supplies water from a water supply to produce acid ionized water and alkaline ionized water. Tableware is washed with acid ionized water in a first washing step. Therefore, dirt attached to the tableware can be discharged in cohesion, and the tableware is

washed with alkaline ionized water in at least one of a second or later washing steps. The fats and oils, protein and starch still attached to the tableware are thereby subject to emulsification, hydrolysis and swelling, potentially improving the washing effect. No detergent is added manually, let alone automatically. Thus, Applicants respectfully submitted that Sumida does not disclose or otherwise suggest providing a modifying agent feeding device with a dosing and feeding device, which is a volumetric measuring valve for providing a modifying agent (a mixture of one or more detergents) at a certain quantity in the washing machine, with an electrolyzed water-generating device for providing electrolyzed water. Sumida also does not disclose the detailed structure of the modifying agent feeding device and the volumetric measuring valve for providing the modifying agent. The recited technical structure in claim 1 is not a conventional technique for one of ordinary skill and is not disclosed by the cited references of record.

Furthermore, because the mixture of one or more detergents is added into the washing tube automatically in this application, as required by claim 1, the alkaline ionized water activated by the detergent fed by the modifying agent supply device into the washing tub, the PH value of washing liquid is thereby adjusted to between 9 and 11. This PH range is the most beneficial washing condition for efficient washing, fabric hardening is eradicated, and a high detergency ratio can be achieved.

Therefore, in view of the foregoing amendments and remarks, claim 1, and the claims which are dependent therefrom, are neither anticipated by Sumida, or rendered obvious by Sumida. As such, Applicants respectfully request reconsideration and withdrawal of these rejections.

Claim 4

Claim 4 has been amended to recite the structures of the modifying agent feeding device and the dosing and feeding device, as well as the connection of the dosing and feeding device with the water supply tube in the washing machine. Claim 4 has also been amended to include the limitation that “the modifying agent is a mixture of one or more detergent.” These amendments to claim 4 are fully supported by at least paragraphs 34, 37, 38, 57, and/or 93, and at least Figure 6. By these amendments, as explained with reference to the above remarks for claim 1, Applicants have clearly differentiated claim 4 over the cited references within the Office Action. Applicants, therefore, respectfully request reconsideration and allowance of claim 4, and the claims depending therefrom, for at least the same reasons stated above for claim 1.

Claim 9

Claim 9 has been amended to recite the structures of the modifying agent feeding device and the dosing and feeding device, as well as the connection of the dosing and feeding device with the water supply tube in the washing machine. Claim 9 has also been amended to include specific washing steps relative to the elements of the washing machine, as well as to include the limitation that “the modifying agent is a mixture of one or more detergent.” These amendments to claim 9 are fully supported by at least paragraphs 32, 33, 34, 37, 38, 57, and/or 93, as well as at least Figure 6. By these amendments, Applicants have clearly differentiated claim 9 over the cited references within the Office Action. Therefore, Applicants respectfully request reconsideration and allowance of claim 9 for at least the following reasons.

Specifically, Hasegawa is directed to a dishwasher which electrolyzes water supplied from the outside, and which produces strong alkali water and strong acid water. Alkali detergent 18 is supplied from the detergent feed hopper 19 with the opening and closing valve opened, and closed by the signal from the control device. However, Hasegawa does not disclose or otherwise suggest providing a modifying agent feeding device with a dosing and feeding device, which is specifically a volumetric measuring valve for providing the modifying agent (a mixture of one or more detergents) at a certain quantity in a washing machine, with an electrolyzed water-generating device for providing electrolyzed water. More specifically, Hasegawa does not disclose the technical feature of:

a modifying agent feeding device which comprises:

a liquid storage container having a bottom;

a dosing and feeding device having an input end and a plurality of output ends, set at a lower part of the liquid storage container for providing modifying agent at a certain quantity, wherein a input end of the dosing and feeding device is connected with a liquid outlet tube at a bottom of the liquid storage container, wherein the dosing and feeding device is a volumetric measuring valve comprising:

a buffer chamber with a rating volume at the center of volumetric measuring valve,

a modifying agent valve located at the liquid outlet tube at the bottom of the liquid storage container for introducing modifying agent into the buffer chamber,

a water inlet valve and a water outlet valve set in the opposite of the buffer chamber,
an emptying valve at the bottom of the buffer chamber,

wherein the water inlet valve and the water outlet valve is connected respectively to the first drainpipe which connected to a cathode chamber of the electrolyzing cell for

providing electrolytic solution into the buffer chamber, the water outlet valve is connected to the first drainpipe and discharging the mixture of electrolytic solution and modifying agent from the buffer chamber into the washing tube, and the water inlet valve and water outlet valve alternatively control the water feeding into the buffer chamber and discharging the mixture of electrolytic solution and modifying agent from the buffer chamber into the washing tube by their turn-on and turn-off.

These specific technical features are not conventional to a person of ordinary skill. In addition, Sumida and the other cited references within the Office Action do not disclose or otherwise suggest these technical features, as explained above with reference to claim 1.

In view of the foregoing, claim 9 is not obvious over Sumida in view of Hasegawa. As such, Applicants respectfully request reconsideration and allowance of claim 9.

Claims Which Depend From Claims 4 and 9

Applicants also request reconsideration of claims 5-6, 8, and 10, which were rejected as being dependent on rejected independent claims 4 and 9, for at least the following reasons. With the amendments to claims 4 and 9, these claims now require a device that is novel and non-obvious in view of Sumida and/or Hasegawa, as explained with respect to claims 4 and 9. As a result, Applicants respectfully request reconsideration and allowance of claims 5-6, 8, and 10.

CONCLUSION

Applicants respectfully request entry of the present amendments and examination of the pending claims in view thereof. Commissioner is authorized to charge any fee deficiency, or credit any overpayments, to Deposit Account No. 502261. The Examiner is invited to contact

the undersigned if the Examiner believes a telephone conference would expedite allowance of the present claims and application.

Respectfully submitted,

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